

GAME MACHINE, SLOT MACHINE, AND GAME PROGRAM

TECHNICAL FIELD OF THE INVENTION

The present invention relates to a game machine and a game program displaying, before a
5 bonus game starts, the possible payout value that can be awarded to a player as payout in the bonus
game.

BACKGROUND OF THE INVENTION

Conventional game machines provide, in addition to normal games, bonus games that are
10 more likely to be advantageous to a player as compared to normal games. In addition to providing
an attractive game, bonus games provide differences from normal games such as increased win
rates and higher payouts for wins. As a result, the player generally experiences a high degree of
anticipation for bonus games.

Another conventional game machine displays a number or a multiplication factor in a
15 symbol display region. The number or multiplication factor serves as a wild symbol, and the
number is added to or the multiplication factor is multiplied to the payout which corresponds to the
symbols lined up on a win line.

A conventional game machine is disclosed in Japanese Utility-Model Laid-Open Publication
Number Hei 520383, for example.

20 However, game machines are not known that indicate the payout value that can be obtained
by the player in a bonus game. In particular, there are no game machines that indicate the payout
values that the player can obtain in a bonus game based on the total bet count. Thus, a player's
curiosity can be increased further by displaying, before a bonus game, the payout value that can be

obtained by the player in the bonus game.

SUMMARY OF THE INVENTION

The object of the present invention is to increase the player's curiosity by displaying, before a bonus game, the payout value that can be obtained in the bonus game by the player.

In order to achieve the object described above, a game machine of the present invention provides a normal game and a bonus game having a high probability of being advantageous to a player. The game machine includes: a display module that, at a start of a game, provides a changing display of symbols that were in a static state in a plurality of display regions, the symbols are capable of changing continuously to other or various symbols, including a bonus symbol, and that provides a static display in which the symbols in the changing display state are stopped and are statically displayed in the display regions; and an evaluation module that determines, if a game state is the normal game state, whether or not at least one of the bonus symbols that is or will be displayed statically meets conditions for starting the bonus game. If the condition is met, the display module displays the possible payout value that can be awarded to the player as payout for the bonus game before the bonus game starts.

Thus, when it is determined that the above condition is met, a display is provided before the bonus game of a possible payout value that can be awarded to the player as the bonus game payout. Thus, the player knows ahead of time the payout value that can be obtained in the bonus game. As a result, the player's anticipation and curiosity regarding the bonus game is increased, and this heightens the player's interest in the game.

According to another aspect, in a game machine according to the present invention, the possible value for the payout value to be awarded to the player is identified as a value range.

Since the possible payout value that can be obtained is indicated as a value range, the player knows ahead of time the payout value that can be obtained in the bonus game. A payout range is a numerical range defined by a lower limit and an upper limit, e.g., "30 - 100". As a result, the player's anticipation and curiosity regarding the bonus game is increased, and the player's interest in the game is heightened.

According to another aspect, in a game machine according to the present invention, the possible value for the payout value to be awarded to the player is identified as a plurality of independent values.

Since the possible payout values that can be obtained are indicated as multiple independent values, the player knows the payout values that can be obtained in the bonus game ahead of time. Multiple, independent values are independent numerical values unrelated to each other, e.g., "30", "50", and "100". As a result, the player's anticipation and curiosity regarding the bonus game are increased, and the player's curiosity regarding the game is heightened.

According to another aspect, in a game machine according to the present invention, the possible value for the payout value is defined as a value expressed using an addition or multiplication operator.

Since the possible payout value that can be obtained is defined as a value notation using the addition or multiplication operator, the player is able to easily predict the size of the payout value that can be obtained in the bonus game. As a result, the player's anticipation and curiosity regarding the bonus game is increased, and the player's curiosity regarding the game is heightened.

According to another aspect, in a game machine according to the present invention, the display module displays the possible value for the payout value to be awarded to the player and also displays the bonus symbol in the display region at which the bonus symbol was displayed.

curiosity regarding the bonus game is increased, thus heightening the player's interest in the game.

According to another aspect, a game program according to the present invention is a computer-executable game program providing a normal game and a bonus game having a high probability of being advantageous to a player. A computer-readable medium encoded with processing instructions can implement a method for providing the computer-executable game program. The game program includes: an operation for displaying a symbol in each of a plurality of display regions in a game display module; an operation for providing, at a start of a game, a changing display of symbols that were in a static state in a plurality of display regions, the symbols are capable of changing continuously to other or various symbols, including a bonus symbol, and for providing a static display stopping the symbols in the changing display state and statically displaying the symbols in the display regions; an operation for evaluating, if a game state is in the normal game state, whether or not at least one of the bonus symbols that is or will be displayed statically meets conditions for starting the bonus game; an operation for calculating a possible payout value that can be awarded to the player as payout for the bonus game before the bonus game starts if the condition is met as a result of the evaluation; and an operation for displaying results of the calculation on the game machine display module before the bonus game is begun.

Thus, when it is determined that the above condition is met, a display is provided before the bonus game of a possible payout value that can be awarded to the player as the bonus game payout. Thus, the player knows ahead of time the payout value that can be obtained in the bonus game. As a result, the player's anticipation and curiosity regarding the bonus game is increased, and this heightens the player's interest in the game.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective drawing showing the exterior of a game machine according to an embodiment of the present invention;

5 Figs. 2A and 2B are block diagrams showing the electronic architecture of a game machine according to the embodiment of Fig. 1;

Fig. 3 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

Fig. 4 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 1;

10 Fig. 5 is a drawing showing a sample display of a symbol display module;

Fig. 6 is a drawing showing a sample display of a symbol display module;

Fig. 7 is a drawing showing a sample display of a symbol display module;

Fig. 8 is a drawing showing a sample display of a symbol display module;

15 Fig. 9 is a flowchart showing the operations performed by a game machine according to another embodiment of the present invention;

Fig. 10 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 9;

Fig. 11 is a flowchart showing the operations performed by a game machine according to the embodiment of Fig. 9;

20 Fig. 12 is a drawing showing a sample display of a symbol display module;

Fig. 13 is a drawing showing a sample display of a symbol display module; and

Fig. 14 is a drawing showing a sample display of a symbol display module.

LIST OF DESIGNATORS

1: game machine; 7: symbol display module; 30: CPU; 31: ROM; 32: RAM; 81 - 83: bonus symbol; 100 - 102: bonus symbol

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

EMBODIMENT OF FIGS. 1 - 4

A game machine according to an embodiment of the present invention provides a normal game and a bonus game that is more likely to be advantageous to the player compared to the normal game. When the game machine is in the normal game state, the condition for starting a
10 bonus game is met when at least one bonus symbol is statically displayed in a display module. When it is determined that this condition is met, the possible payout that can be awarded to the player as the bonus game payout is displayed before the start of the bonus game.

In this embodiment, an example of the condition needed for starting a bonus game is for three mole nest symbols to be displayed in the display module, which has five reels. As shown in
15 Fig. 6, when a first reel 71 through fifth reel 75 have stopped and three mole nest symbols 81 - 83 appear, the next game will be a bonus game. If the results are determined ahead of time by random selection, it is known before the reels actually stop whether or not the above condition is met.

In this embodiment, as shown in Fig. 6, the possible payout values that the player can be
20 awarded as a bonus game payout are displayed on each of the mole nest symbols. In Fig. 6, the mole nest symbol 81 displays "30", the mole nest symbol 82 displays "50", and the mole nest symbol 83 displays "100". These payout values signify that 30, 50, or 100 coins can be obtained. As a result, the player is able to know ahead of time the possible payout value that can be obtained

in the bonus game.

The present invention can be implemented for any device (e.g., a device that provides a game) that can display symbols. This embodiment presents a game machine that provides a changing display in the vertical (horizontal is also possible) display of multiple types of symbols and provides a static display of the changing symbols based on the results of an internal random selection. For the section of the game machine that displays the symbols in a changing manner, a mechanical reel can be used. Alternatively, video reels can be used, where symbols are displayed in a changing manner as images on a liquid crystal display or the like. In addition to game machines, e.g., slot machines installed in pachinko parlors, where a player actively operates a stop button to determine a stopping timing and a stopping sequence for the reels, the present invention can also be implemented for game machines, e.g., in pachinko machines and slot machines in casinos, where the reels automatically stop in sequence regardless of the player's intentions. This embodiment presents an example in which the present invention is implemented for a video slot machine.

In this embodiment, coins are used as examples of game prizes, but the present invention is not restricted to this and any medium, e.g., pachinko balls, that can provide game value can be used. The present invention can be implemented for any game machine which provides both normal games and bonus games. The present invention can be implemented on any game machine, e.g., a game machine providing card games, as long as there are both normal games and bonus games.

In Fig. 1, a game machine 1 includes a case 2 and a front panel 3 attached to the front of the case 2 so that it can open and close. A symbol display module 7, disposed behind the front panel 3, is formed from a liquid crystal panel or a CRT (Cathode-Ray Tube) and displays columns

of symbols, e.g., five columns. This embodiment uses video reels. A program is executed and five reels are displayed in the symbol display module 7.

As shown in Fig. 5 through Fig. 7, the symbol display module 7 includes five reels that display symbols in a changing and static manner in columns (vertically, with respect to the game machine). More specifically, there is a first reel 71, a second reel 72, a third reel 73, a fourth reel 74, and a fifth reel 75. Symbols can be changingly and statically displayed on each reel.

The symbol display module 7 contains bonus symbols rendering mole nests, wild symbols, and various other symbols. As described above, multiple types of symbols are changingly displayed vertically, and then the changing symbols are statically displayed based on internal random selection results.

On the front of the case 2, there is disposed a coin deposit opening 10 and a coin return button 10a for getting coins back when a deposited coin is stuck or the like. A start lever 11 is a lever for starting the spinning display (changing display) on the symbol display module 7.

The game on the game machine 1 is started when the player performs a bet operation and a valid win line is established. A win line is a line where a win is established when a predetermined combination of symbols is arranged on the line. Different types of win line settings are possible, e.g., a horizontal center line, upper and lower horizontal lines, and diagonal lines. A bet operation takes place when a coin is dropped into the coin deposit opening 10, described later, or when a stored coin deposit button 21 is used to bet a stored coin. A bet operation is also possible by combining these bet operations.

As described above, the win line can be set up ahead of time at the start of a game. Alternatively, wins can be established based on a predetermined arrangement of symbols. For example, in this embodiment, a bonus game is won if three bonus symbols are displayed in any

three regions in the symbol display module 7. When wins can be established in this manner based on a predetermined symbol arrangement unrelated to the win line, wins can be established with a greater degree of freedom compared to when a win line is set up ahead of time in a fixed manner. This also increases the player's anticipation.

5 When a win line is set up by a player's bet operation and the start lever 11 is operated, the symbol display module 7 displays symbols in a changing manner. Then, when a predetermined period of time has elapsed, the symbol display module 7 sequentially displays the changingly displayed symbols in a static manner. The stopping sequence can be, for example, from left to right when facing the symbol display module 7. When stopping, the stopping operations are
10 separated by a time interval, e.g., 0.5 seconds. If, in this stopped state, a predetermined symbol combination is displayed on a win line, a win corresponding to the predetermined symbol combination is obtained.

A coin deposit opening 15 and a coin holding tray 16 are disposed below the front panel 3. Above the front panel 3 is disposed a game effects display 17, which is driven to provide game
15 effects. The game effects display 17 can be formed from an LCD (Liquid Crystal Device), various types of lamps, or the like. In this embodiment, an LCD is used. Also, a bonus game display 18 is disposed above the front panel 3. The bonus game display 18 is formed from LED's (Light Emitting Diodes) and is used when the player is awarded a win or a bonus that gives the player a high game value, as well as for game effects and when an error takes place. A speaker 19
20 generates voice instructions, music, sound effects, and the like. When a bonus is won, the game proceeds in a manner that is advantageous to the player, e.g., the win rate becomes 1/3.

Multiple lamps 20 disposed on the front panel 3 can be lit up, turned off, and made to blink in order to provide game-related display operations, e.g., displaying the active win lines based on

the number of deposited coins (or the number of credits that were bet), displaying wins, and the like. The stored coin deposit button 21 is a button for using a predetermined number of coins stored (credited) in a coin storage device not shown in the figure. A stored coin deposit button 22 is a button for using the maximum allowable number of coins stored in the coin storage device not shown in the figure. A coin storage count display module 23 displays the number of coins stored in a the coin storage display, not shown in the figure. A win count display module 24 displays the number of remaining rounds, the number of wins, and the like when a bonus prize is won. A coin payout count display module 25 displays the number of coins paid out and the like. The coin storage count display module 23, the win count display module 24, and the coin payout count display module 25 can be formed, for example, from LED's. An accounts button 26 is for settling accounts with regard to the stored coins. A locking device 27 locks or unlocks a door depending on the direction in which it is turned. A label 28 indicates the type of the game machine 1, the name of the manufacturer, or the like.

Figs. 2A and 2B are drawings showing the electronic architecture of the game machine according to this embodiment. As shown in Figs. 2A and 2B, electronically, the game machine 1 is formed from a main substrate A (Fig. 2A) and a sub-substrate B (Fig. 2B). The main substrate A is equipped with a CPU 30, a ROM 31, and a RAM 32 and performs control operations according to a program set up ahead of time. The ROM 31 contains a control program for controlling the operations of the game machine 1 as well as information such as a prize group selection table used to determine prize groups ahead of time (internal random selection). The CPU 30, the ROM 31, and the RAM 32 form an evaluation module.

The CPU 30 is connected to a clock generator circuit 33 generating a reference clock pulse and a random number generator circuit 34 generating a fixed random number. Control signals sent

symbol display module 7.

First, there is a normal game start operation in the form of player input (step S1). In this case, as described above, the win line is established by the player's bet operation, and the start lever 11 is then operated. In this embodiment, as described above, wins can be established not only with a win line set up ahead of time at the start of a game but also based on the arrangement of bonus symbols. Since a win can be established based on the arrangement of bonus symbols in this manner, there is a greater degree of freedom in wins compared to when wins can only be established with a win line set up ahead of time. As a result, the player's anticipation is increased.

Next, random values are obtained to be used for stopping numbers of the first reel 71 through the fifth reel 75 (step S2), and the first reel 71 through the fifth reel 75 begin spinning (step S3). At this point, the symbol display module 7 is as shown in Fig. 5, where symbols appear to be spinning and changing in the display regions of the reels. The direction in which the reels spin can be, for example, from top to bottom or from bottom to top. Also, the spinning does not need to be along the vertical direction. It is possible for the reels to be arranged horizontally so that they spin from left to right or from right to left.

Next, the spinning of the first reel 71 through the fifth reel 75 is stopped sequentially (step S4). In this case, stopping takes place in sequence from the first reel 71 to the fifth reel 75, separated by predetermined intervals. The intervals can be, for example, 0.5 seconds. Next, an evaluation is made to see if there is a normal game win as well as whether there are three mole nest symbols in the symbol display module 7 (step S5). If three mole nest symbols did not appear, control proceeds to step S14.

As shown in Fig. 6, if three mole nest symbols 81 - 83 appear in the symbol display module 7, the game changes from a normal game to a bonus game (step S6). In this case, the

values displayed along with the three mole nest symbols appearing in the symbol display module 7 are carried over to the bonus game (step S7). More specifically, the values displayed along with the three mole nest symbols indicate the possible payout value that can be obtained by the player in the subsequent bonus game. Since the payout value that can be obtained is displayed along with the bonus symbol, the player is able to directly see the size of the payout value that can be obtained in the bonus game.

In this embodiment, the possible payout values that can be awarded to the player are indicated as multiple, independent values. More specifically, the symbol 81 indicates "30", the symbol 82 indicates "50", and the symbol 83 indicates "100". Since the possible payout values are indicated as multiple, independent values, the player knows ahead of time the possible payout values that can be obtained in the bonus game. In addition to using multiple independent values to indicate possible payout values, it would also be possible to indicate possible payout value ranges, e.g., "30 - 100", on the mole nest symbols.

Next, player performs a bonus game starting operation (step S8). The player performs a bet operation again, and the numbers rendered along with the images of mole nests in the mole nest symbols change corresponding to the number of bets. More specifically, in Fig. 6, the symbol 81 displays "30", the symbol 82 displays "50", and the symbol 83 displays "100", but if the player triples the number of bets, the symbol 81 correspondingly changes to "90", the symbol 82 changes to "150", and the symbol 83 changes to "300", as shown in Fig. 7.

In this manner, the bonus game payout value increases when the number of bets is higher. This makes the player increase the number of bets. As a result, the player's anticipation and curiosity regarding the bonus game is heightened. It is also possible to have the possible payout values displayed along with the bonus symbols change corresponding to the number of win lines

selected ahead of time by the player. More specifically, in Fig. 6, the symbol 81 displays "30", the symbol 82 displays "50", and the symbol 83 displays "100", but if the number of win lines selected ahead of time by the player is tripled, the symbol 81 can be changed correspondingly to "90", the symbol 82 can be changed to "150", and the symbol 83 can be changed to "300", as shown in Fig. 7. Since bonus game payouts increase when there are more win lines selected by the player ahead of time, the player tends to set up more win lines. As a result, the player's anticipation and curiosity regarding the bonus game is increased. As a result, the player is more interested in the game.

A bonus game is started in response to the bonus game starting operation at step S8, and a random value is obtained for the bonus game (step S9). The symbol display module 7 displays a bonus game screen, as shown in Fig. 8. In this example, an animation is displayed in which a mole character 85 passes through one of underground tunnels 86 - 88 and reaches a goal 89 - 91 on which payout values are displayed. More specifically, the mole character 85 begins burrowing in one of the underground tunnels 86 - 88 (step S10). The intermediate sections of the tunnels 86 - 88 appears as a black box so that the player cannot know what is happening in the intermediate sections of the tunnels 86 - 88.

When the mole character 85 reaches one of the goals 89 - 91 (step S11), the payout value to be obtained by the player is established. More specifically, the player obtains a payout that is either "90", "150", or "300". The bonus game payout is then displayed (step S12), and the game changes from the bonus game to the normal game (step S13). Next, if there is a WIN in Fig. 3, this is added directly to the credits (step S14), and control returns to the calling routine.

With a game machine according to this embodiment as described above, payout values that can be obtained by the player in a bonus game are displayed before the bonus game starts. As a

win can be established based on the arrangement of bonus symbols, there is a greater degree of freedom in how wins can be achieved compared with when wins are achieved only through win lines set up ahead of time. This also increases the player's anticipation.

Next, a random value is obtained to be used for stopping numbers in the first reel 71 through the fifth reel 75 (step T2), and spinning is begun for the first reel 71 through the fifth reel 75 (step T3). At this point, the symbol display module 7 provides a display of symbols spinning and changing in the display regions of the reels, as shown in Fig. 5. In this example, spinning takes place from top to bottom, but it would also be possible for spinning to be from bottom to top. Also, spinning does not have to be vertical. The reels can be disposed horizontally so that they spin from left to right or right to left.

Next, the spinning of the first reel 71 through the fifth reel 75 is stopped sequentially (step T4). In this case, the stopping takes place sequentially going from the first reel 71 to the fifth reel 75, separated by a predetermined time interval. The time interval can be, for example, 0.5 seconds. Next, an evaluation is performed to see if there is a normal game win or if there are three hammer bonus symbols (step T5). If three hammer symbols are not present, control proceeds to step T20.

If there are three hammer symbols, the game changes from the normal game to a bonus game as shown in Fig. 10 (step T6). The combination of three hammers is carried over to the bonus game (step T7). In Fig. 12, there a single gold hammer symbol 100 and two red hammer symbols 101, 102, thus providing three hammer symbols.

When a bonus game is started, the symbol display module 7 displays a screen similar to Fig. 13. In Fig. 13, nine holes 105 - 113 are shown as mole tunnel exits appearing on the ground. The player selects the gold hammer symbol 100, and the red hammer symbols 101, 102 and sets up

each hammer over one of the holes 105 - 113. In Fig. 13, the gold hammer symbol 100 is set up over the hole 109 and the red hammer symbols 101, 102 are set up over the hole 108 and the hole 112, respectively.

In the game machine 1 according to this embodiment, the symbol display module 7 includes a touch panel. The player touches the screen to select a hammer, and one of the holes 105 - 113 can be selected for the selected hammer. Alternatively, various methods can be used for the on-screen selection, e.g., a pointing device or a cursor.

Next, a random number is obtained for selecting the hole 105 - 113 from which the mole character will appear, as shown in Fig. 11 (step T9). Then, the mole is made to emerge (step T10). An evaluation is made to determine if the mole emerged from the hole 108 or the hole 112 where the red hammers are set up (step T11). If the mole did not emerge from the hole 108 or the hole 112 where the red hammers are set up, control proceeds to step T14.

If the mole emerges from a hole at which a red hammer is set up, an animation is played showing the red hammer hitting the mole at the hole 112, as shown in Fig. 14 (step T12). Then, the payout value is displayed (step T13). In Fig. 14, the payout value for the hole 112 is shown as "20". Next, an evaluation is made to determine if the mole emerged from the hole 109, where the gold hammer is set up (step T14). If the mole did not emerge from the hole 109, where the gold hammer is set up, control proceeds to step T17. If the mole appears from the hole 109, where the gold hammer is set up, an animation is shown at the hole 109 of Fig. 14 of the mole being hit with the gold hammer (step T15). Since the gold hammer doubles the payout value, a display is provided showing the payout value for the hole 109 being doubled (step T16). In this case, the multiplication operator "x" is used, but it would also be possible to use the addition operator "+". Since the possible payout values that can be obtained are defined as expressions using an addition

or multiplication operator, the player can easily predict the size of possible payout values from the bonus game.

In Fig. 14, the mole does not emerge from the hole 108, where a red hammer is set up, but a mole emerges from the hole 105, where no hammer is set up. In this case, the player cannot obtain a payout.

Next, an evaluation is made to determine if all the moles have emerged (step T17). If all the moles have not emerged, control proceeds to step T9. If all the moles have emerged, the bonus game payout is displayed (step T18) and the game shifts from the bonus game to the normal game (step T19).

Next, if there is a WIN, the value is added to the credit, as shown in Fig. 9 (step T20), and the procedure returns.

As described above, with the game machine according to this embodiment, the gold hammer bonus symbol itself serves to double the payout value. Thus, if the gold hammer appears, the game shifts to the bonus game, and the gold hammer is able to hit a mole, the payout value is doubled. As a result, the player's anticipation can be increased.

The characteristic operations of the present invention described above are performed by having a computer execute a control program. More specifically, this control program is a game program that allows a computer to execute and provide a normal game and a bonus game having a high probability of being more advantageous to the player compared to the normal game. The game program provides the following operations in the form of computer-readable and computer-executable commands: an operation for displaying symbols in a plurality of display regions in a game machine display module; an operation for, at a start of a game, providing a changing display of the symbols that were in a static state in the plurality of display regions, the symbols are capable

of changing continuously to other or various symbols, including a bonus symbol, and for providing a static display stopping the symbols in the changing display state and statically displaying the symbols in the display regions; an operation for evaluating, if a game state is in the normal game state, whether or not at least one of the bonus symbols that is or will be displayed statically meets conditions for starting the bonus game; an operation for calculating a possible payout value that can be awarded to a player as payout for the bonus game if, as a result of the evaluation, the condition is met; and an operation to display results of the calculation on the game display module before the bonus game is started.

As described above, when the above conditions are met, the possible payout value that can be awarded to the player is displayed before the start of the bonus game, allowing the player to know ahead of time the payout value that can be obtained in the bonus game. As a result, the player's anticipation and curiosity regarding the bonus game is increased, thus provoking the player's interest in the game.

The program described above can be obtained in recorded form on a recording medium, e.g., CD-ROM or DVD. This type of program can also be obtained by receiving a signal sent from a computer serving as a transmission device by way of a transmission medium such as a communication network formed from public telephone lines, dedicated phone lines, cable TV lines, and wireless communication lines. The signal referred to here is a computer data signal in the form of a predetermined carrier wave containing the program. Regarding this transmission, it is sufficient for at least one section of the program to be transmitted through the transmission medium. More specifically, the entirety of the data for the above program does not need to be present simultaneously in the transmission medium. Also, transmission methods for transmitting the program from the computer include transmitting the data for the program continuously and

